

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-15. (Cancelled)

16. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

an initial film-forming step of forming a ~~conductive~~ an initial metal film on a ~~substrate~~; substrate by executing once or a plurality of times, a source gas supplying step of supplying gas obtained by vaporizing an organic source to the substrate and allowing the organic source to be adsorbed on the substrate, and thereafter an excited-gas supplying step of supplying gas excited by plasma to the substrate, and causing the organic source adsorbed on the substrate to react with the gas excited by plasma, and forming a metal film on the substrate; and

a main film-forming step of forming a ~~conductive~~ main metal film ~~on the film~~ ~~being the same film as the initial metal film~~ on the initial metal film using a thermal CVD method, by simultaneously supplying the gas obtained by vaporizing the organic source and oxygen-containing gas or nitrogen-containing gas not excited by plasma,

~~the initial film-forming step and the main film-forming step being performed in the same processing chamber and performed at the same processing temperature~~ formed in the initial film-forming step,

~~the initial film-forming step comprising:~~

~~a source gas supplying step of supplying gas obtained by vaporizing an organic source to the substrate; and thereafter~~

~~an excited gas supplying step of supplying gas excited by plasma, and~~

~~the main film-forming step, comprising:~~

~~a step of simultaneously supplying gas obtained by vaporizing an organic source and oxygen containing gas or nitrogen containing gas not excited by plasma.~~

17. (Currently Amended) The method of manufacturing the semiconductor device according to claim 16, wherein film thickness of the initial metal film formed in the initial film-forming step is set to be 5 to 15 nm, and film thickness of the main metal film formed in the main film-forming step is set to be 20 to 40 nm.

18. (Currently Amended) The method of manufacturing the semiconductor device according to claim 16, wherein the initial metal film is a Ru film or a RuO₂ film, and the main metal film is a Ru film or a RuO₂ film, ~~main film forming step is a step of forming the film by thermal CVD, and the initial film forming step and the main film forming step are performed at the same temperature.~~

19. (Currently Amended) The method of manufacturing the semiconductor device according to claim 16, wherein

~~the processing temperature of the initial film-forming step and the main film-forming step are performed at the temperature of 250°C to 350°C.~~

20. (Currently Amended) A substrate processing apparatus, comprising:
a processing chamber for processing a substrate;
a heater for heating the substrate in the processing chamber;
~~a source gas supply port pipe for supplying an organic source gas for forming a conductive metal film in~~ into the processing chamber;
a gas pipe for supplying oxygen-containing gas or nitrogen-containing gas into the processing chamber;
an exciting unit for exciting gas by plasma;
~~an excited gas supplying port~~ excited gas pipe for supplying the gas excited by plasma into the processing chamber;

an exhaust ~~port pipe~~ for exhausting interior of the processing chamber; and
a control unit for controlling ~~the gas excited by plasma so as to be supplied to the~~
~~substrate after organic source gas is supplied to the substrate.~~

forming an initial metal film on a substrate by executing once or a plurality of
times, supplying the organic source gas into the processing chamber and allowing the organic
source to be adsorbed on the substrate, and thereafter supplying the gas excited by plasma
into the chamber, and causing the organic source adsorbed on the substrate to react with the
gas excited by plasma, and forming a metal film on the substrate,

forming a main metal film being the same film as the initial metal film on the
initial metal film using a thermal CVD method, by simultaneously supplying the organic
source gas and oxygen-containing gas or nitrogen-containing gas not excited by plasma into
the processing chamber, and

forming the initial metal film and the main metal film at the same processing
temperature.